

REMARKS

Claims 12-15, 17-19, and 21-29 were previously pending in this application.

Claims 21, 24-26 and 29 are cancelled, without prejudice or disclaimer.

Claims 12-15, 17-19, 22, 23, 27, and 28 are currently amended.

Claims 30-33 are newly added.

As a result, claims 12-15, 17-19, 22, 23, 27, 28, and 30-33 are pending for examination with claims 12, 30, and 31 being independent claims.

No new matter has been added and support for the amendments to the claims as well as for the new claims can be found in the originally filed specification and claims as well as the accompanying figures.

Provisional Double Patenting Rejection

Claims 12-15, 17-19, and 21-29 have been provisionally rejected under the judicially created doctrine of double-patenting over claims 12-14, 17-19, 21 and 22 of co-pending application Serial No. 10/001,543 in view of Tagashira *et al.*

Applicants acknowledge the provisional double patenting rejection and reserve the right to respond accordingly, if necessary.

Rejection under 35 U.S.C. § 112

Claims 21-28 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 22, 23, and 27-28 have been amended to clarify that which Applicants regard as the invention. Claims 21 and 24-26 have been cancelled. Thus, the rejection under 35 U.S.C. § 112, second paragraph, has been overcome.

Accordingly, Applicants respectfully request withdrawal of the rejection of claims 21-23 and 27-28 under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 103

Claims 12-15 and 21-25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the teaching of Iida *et al.* in U.S. Patent No. 6,106,728 (the '728 patent) in view of the teaching of the abstract section of Japanese Patent Application Publication No. 6-121978 (JP06121978).

Claims 17-19 and 26-29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the teaching of the '728 patent in view of the teaching of the abstract of JP06121978, as applied above, and further in view of the teaching of Katzakian *et al.* in U.S. Patent No. 3,928,192 (the '192 patent).

Obviousness is determined based on the underlying factual inquiries including the scope and content of the prior art, the level of ordinary skill in the prior art, the differences between the claimed invention and the prior art, and objective evidence of nonobviousness. A *prima facie* case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination. The conclusion that the claimed subject matter is *prima facie* obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. Obviousness rejections must rest on a factual basis, with these facts being interpreted without hindsight reconstruction of the invention from the prior art and without resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis.

The '728 patent teaches a slurry recycling system and method for a chemical mechanical polishing apparatus. The slurry recycling system has a first filter for particles greater than 10 microns, a concentration adjuster for adjusting the concentration of abrasive material in the slurry stream, a deionizer, a pH adjuster, and a second filter for removing particles greater than 0.5 microns. (The '728 patent at column 5, lines 22 *et seq.*) The '728 patent teaches that the deionizer and the pH adjuster serve to restore the pH of the slurry stream to an initial pH value of about 11. (Id.) The deionizer can comprise an ion exchange resin or an ion exchange film. (Id.)

JP06121978 teaches a method for removing impurity in waste water by utilizing activated carbon and/or ion-exchange resin and an electrochemical removing process utilizing a fixed floor type three-dimensional electrode. (Abstract of JP06121978.)

The '192 patent teaches a method and system of buffering an ion exchange water demineralization process. The '192 patent teaches utilizing a hydrated amine buffering solution

to condition an ion exchange resin that is used to demineralize brackish water or wastewater streams. (The '192 patent at column 2, lines 44 *et seq.* and at column 3, lines 56 *et seq.*)

Applicants respectfully disagree claims 12-15 and 21-25 would have been obvious over the teaching of the '728 patent in view of the teaching of the abstract of JP06121978. The rejection is improper for failing to establish a *prima facie* case of obviousness.

The '728 patent fails to provide any teaching, suggestion, or motivation to modify or combine the disclosed slurry recycle system with the teaching of the abstract of JP06121978. Likewise, JP06121978 fails to provide any teaching, suggestion, or motivation to modify or combine the disclosed method for removing impurity with the teaching of the '728 patent. Significantly, none of the references teaches, suggests or provides any motivation "to provide additional purification of the fluid undergoing treatment." (Cf. the '728 patent at column 9, lines 12 *et seq.*) Further, neither reference teaches, suggests, or provides any motivation to utilize a chelating ion exchange resin or an ion exchange resin having an iminodiacetic functional group. Thus, there is no *prima facie* of obviousness.

As noted above, neither the '728 patent nor JP06121978 provides any teaching, suggestion, or motivation to utilize a chelating ion exchange resin or an ion exchange resin comprising an iminodiacetic functional group. Likewise, the '192 patent also fails to provide any teaching, suggestion, or motivation to combine the slurry recycling system, disclosed in the '728 patent, with the teaching of JP06121978 or to utilize a utilize a chelating ion exchange resin or an ion exchange resin comprising an iminodiacetic functional group in a slurry recycling system or in a method for removing impurity in waste water for washing a printed circuit board. Thus, the rejection is improper for failing to establish a *prima facie* case of obviousness.

Besides failing to provide any factual basis for the proposed combination, there is no reasoned explanation as to why one skilled in the art would utilize a chelating resin with a carbon bed in the system disclosed in the '728 patent. While the ion exchange resin disclosed in the '192 patent may be "capable of removing ions from wastewater in substantially the same manner as the ion exchange resin of the modified primary reference," there has been no reasoned explanation why one skilled in the art would specifically utilize a chelating resin, or an ion exchange resin with an iminodiacetic functional group, with the teaching of the '728 patent

and/or the teaching of JP06121978, which leads to the conclusion that these references were selected with the assistance of hindsight.

Further, even if the teachings of the cited references could have been combined, which Applicants do not concede, the proposed combination would not result in the claimed invention. At best, the proposed combination would result in a slurry recycling system having an activated carbon bed, a 10-micron filter, a deionizer comprising a cartridge type ion exchange resin or ion exchange film, a pH adjuster, an electrochemical removing process using a fixed floor type three-dimensional electrode, a concentration adjusting tank, and a 0.5-micron filter. The deionizer would be conditioned with a hydrated amine buffer solution. Thus, any *prima facie* case of obviousness is rebutted because the proposed combination would fail to recite at least one limitation recited in the present claims.

Thus, there is also no *prima facie* case of obviousness. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 12-15, 17-19, and 21-29 appear to be rejected under 35 U.S.C. § 103(a) as being unpatentable over claims 12-14, 17-19, 21 and 22 of U.S. Patent Application Serial No. 10/001,543 in view of the teaching of Tagashira *et al.* in U.S. Patent No. 4,070,281 (the '281 patent).

Applicants respectfully disagree that claims 12-15, 17-19, and 21-29 would have been obvious over the disclosure of U.S. Patent Application Serial No. 10/001,543 in view of the teaching of the '281 patent.

The present application is a divisional application of U.S. Patent Application Serial No. 09/113,982 filed on July 10, 1998 (now U.S. Patent No. 6,346,195). U.S. Patent Application Serial No. 10/001,543 is a divisional application of U.S. Patent Application Serial No. 09/113,981 also filed on July 10, 1998 (now U.S. Patent No. 6,315,906). Thus, the cited application is not available as a prior art reference under 35 U.S.C. § 102.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a) over U.S. Patent Application Serial No. 10/001,543 in view of the teaching of the '281 patent.

CONCLUSION

In view of the foregoing Amendments and Remarks, this application is in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/0214.

Respectfully submitted,
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